SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS DOCUMENT MAY BE ILLEGIBLE DUE TO BAD SOURCE DOCUMENTS.

	◄
Facility Name: CAHOKIA DEAD CREEK	1.3
Location: SAUGET IL. (ST CLAIR COUNTY)	7/20/82
EPA Region: 5	153493
Person(s) in Charge of the Facility:	
	·
Name of Reviewer: C. E. Mays III Date: 7/20/82	
General Description of the Facility:	
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)	
Unlined creek bed - the surrounding area had several	
landfills operating in the creak's vicinity since 1927 to	
the 1960's. Site is surrounded on the north by sciencel	
large companies which have been operating since the 1900's.	·
·	
Scores: $S_M = 9.70$ ($S_{gw} = 4.24$ $S_{sw} = 7.55$ $S_a = 72.51$)	
S _{FE} = 30.00	, ,
s _{DC} = 50.00	÷

Figure 1

HRS COVER SHEET

Math evor under air pathway colorists Disso

8

		GROUND WATE	ER ROUTE WO	RK SHEET			
	Rating Factor	Assigned (Circle		Hulti- plier	Score	Max. Score	Ref. (Section)
1	OBSERVED RELEASE	0	45	1	45	45	3.1
	If observed relea].
2	ROUTE CHARACTERIS	TICS	•	•			3.2
	Depth to Aquifer Concern	of 012	2 3	2		6	
	Net Precipitation Permeability of t Unsaturated Zone	he 012		1		3 3	
	Physical State	012		11		3	
	Tot	al Route Cha	aracteristi	cs Score	N/A	15	
[3]	CONTAINMENT	01:	2 3	1	N/A	3	3.3
4	WASTE CHARACTERIS	TICS					3.4
	Toxicity/Persiste Hazardous Waste Quantity	nce 030 ⊙12	6 9 12 15 (2 3 4 5 6 7	B) 1 8 1	18	18 8	
	. To	tal Waste Ch	naracterist	ics Score	18	26	
3	TARGETS Ground Water Use Distance to Near- est Well/Populat Served	ion 12 10	2 3 6 8 10 6 18 20 0 32 35 40	3	3	9 40	3.5
	To	tal Targets	Score		3	49	
6		, multiply multiply [2]			5	7,330	,
7	Divide line 6 by	57,330 and m	ultiply by	100		4.2	ᅫ

Figure 2
Ground Water Route Work Sheet

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	SURFACE WATER ROUTE WORK SHEET							
Ra	ting Facto	or	Assigned (Circle		Hulti- plier	Score	Max. Score	Ref. (Section
i OB	SERVED REI	EASE	0	(3)	1	45	45	4.1
			is given a v is given a v					
2 ROU	TE CHARACT	TERISTIC	.					4.2
	cility Slotering		0 1 2	3	1		. 3	
1-y Dis	r. 24-hr. tance to 1	Rainfal Nearest			1 2		3 6	,
	rface Watersical Star		0 1 2	3	1		3	
		Total	Route Chara	cteristic	Score	N/A	15	
3 con	TAINMENT	•	012	3	1	N/A	3	4.3
4 WAS	TE CHARACT	TERISTIC	S					4.4
Baz	icity/Pers ardous Was antity		0 3 6 ©1 2	9 12 15 C 3 4 5 6	18) 1 7 8 1	19	18 8	
		Total	Waste Chara	cteristics	s Score	18	26	
I TAR	GETS		•					4.5
Dis En Pop Di	face Water tance to a vironment ulation Se stance to take Downs	Sensit erved/ Water) 04 6 } 12 16	3	3 2 1	900	9 6 40	
		Total	Targets Sco	re		6	55	
	line 1 i	is 45, m is 0, mu	ultiply 1 ltiply 2 x	× 4 ,	(<u>5</u> 4 × 5	64	,350	
7 Div	ide line 🖔	by 64,	350 and mult:	iply·by l	00 S _s	"- 7.	5	

Figure 7

Surface Water Route Work Sheet

28

45 x 18 x 6 = 4660 = 5w

54360 × 150 = 7.55

					
<u> </u>	AIR ROUTE WORE. SI	HEET	<u> </u>	·	
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section
1 OBSERVED RELEASI	E 0 (45)	1	45	45	5.1
Date and Location	2,23,00				
Sampling Protoco	oz: 5- HIM bhoto - ion	izers s	- (legro VA	ma
	0, then S = 0. Enter 45, then proceed to lin		•		
2 WASTE CHARACTERI	STICS				5.2
Reactivity and Incompatibility	0 2 3	1	.1	3	
Toxicity Hazardous Waste Quantity	0 1 2 3 0 1 2 3 4 5 6 7	8 1	0	7 9	
_		•	10		
To	tal Waste Characteristic	s Score	1×	20	
1 TARGETS			-		5.3
Population Withi 4-Mile Radius	n] 0 9 12 15 18 }(2) 24 27 30	1	Z1	30	
Distance to Sens Environment		2	0	6	
Land Use	0 1 23	1	3	3	
· .					
					٠
T	otal Targets Score		24	39	
4 Multiply 1 x [2 × 3			35,100	
Divide line 4 by	35,100 and multiply by	100 S		12-3	T

Figure 9

30,77

Air Route Work Sheet

$$\frac{10}{45 \times 4 \times 24} = \frac{10300}{30.77} = \frac{30.77}{35.00}$$

	١.		
		S	s ²
Groundwater Route Score (Sgw)		4-24	17.98
Surface Water Route Score (S _{sw})		7.55	57.00
Air Route Score (Sa)	-	12.37 136.72	946.50
$s_{gw}^2 + s_{sw}^2 + s_a^2$			1021, 118
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$			15.05
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2} / 1.73$			13 - 46 Sx - 8 - 70

Figure 10 WORKSHEET FOR COMPUTING $\mathbf{S}_{\mathbf{M}}$

FIRE AND EXPLOSION WORK SHEET							
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)		
Containment	1 ③	1	3	3	7.1		
Waste Characterist	ic:				7.2		
Direct Evidence	0 3	1	خ	3			
· Ignitability	0 1 23	1 .	3.	3			
Reactivity	0 0 2 3	1 🖘	1	: 3			
Incompatibility		1	100	` 3			
Hazardous Waste	Quantity (6)1 2 3 4 5 6 7 8	8 1	0	8			
. 7	otal Waste Characteristics	Score	8	20			
3 Targets					7.3		
Distance to Near Population	est 012345	ĭ	3	5			
Distance to Near Building	est 01 0 3	1	2	3			
Distance to Sens Environment	itive 😡 23	1	0	3			
Land Use	0 1 20	1	3	3	·		
Population Within 2-Hile Radius	012343	1	2	5			
Buildings Within 2-Mile Radius	012345	. 1 ,	S	5			
·							
To	tal Target Score		18	24			
Multiply 1 x 2	x 3			1,440			
Divide line 5 by 1,4	40 and multiply by 100		SFE -	30.	0		

Figure 11
Fire and Explosion Work Sheet

48

× 100 = 30

	DIRECT CONTACT WORK	SHEET			
Rating Factor	_	Multi- plier	Score	Hax. Score	Ref. (Section)
Observed Incident	0 (3)	1	45	45	8.1
If line 1 is 45 If line 1 is 0,	proceed to line 4 proceed to line 2				
Accessibility	0123	1	·	3	8.2
Containment	o is	1 1	C	15	8.3
Uaste Characterist Toxicity	0 1 2 3	5	15	15	8.4
Targets .	•				8.5
Population within 1-mile radius	na 0123 @ 5	4	16	30	
Distance to a critical habita	© 2 3	4	0	12	
	Total Targets Score		16	32	
If line 1 is 0	5, multiply 1 x 4 x 5; 0, multiply 2 x 3 x 4 x	15		21,600	
Divide line 16	by 21,600 and multiply by 100		S _{DC} -	50	

Figure 12
Direct Contact Work Sheet

FOR HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given site. The source of information should be provided for each entry and should be a bibliographic-type reference that will allow snyone to find the document used for a given data point. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review by any interested party.

FACILITY NAME:	CAHORIA DEAD CREEK	·
LOCATION:	SAUGET IL. (ST. CLAIR COUNTY)	

1 OBSERVED RELEASE

Contaminants detected off site (5 maximum):

PCB's, Chloro aniline, dichloro benzene, copper, mu ganese, lead,

Cyclohexane, chlorotherol, alithatic hydrocaribans, siver, nickel,

arsenic, cadmium, phosphorous

Reasoning by which the presence of the detected contaminants can be attributed to the facility:

Found in IEPA monitoring wells surrounding the site Wastes corresponds to waste of several inclustries in the area Site is surrounded by various industries surrect "A Preliminary Hydrogeologic Investigation in the Northern Forting Common Dead Creeks & Vicinity " By Ron St. John, 4/BI, IEFA Reform pp. 34-39

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern.

Name/description of aquifers(s) of concern:

NOT APPLICABLE (N/A) - OBSETCUED RELEASE (O.R.)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

N/A - O.R.

Depth from the ground surface to the lowest point of waste disposal/ storage:

N/A - O.R.

Net Precipitation

Mean annual or seasonal precipitation:

Mean annual lake or seasonal evaporation:

Net precipitation (subtract the above figures):

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Permeability associated with soil type:

Physical State

Physical state of waste at time of disposal (or generated gases):

3 CONTAINMENT

Containment

Bethod(s) of waste or leachate containment evaluated:

Method with highest score:

4 WASTE CHARACTERISTICS

Toxicity and Persistence.

Compound(s) evaluated:	TOXICITY	PERSISTENCE
Pc.B's	3	3
Chloro amiline	3	l
dichlaro tenzene	2	2
cyclohexame	2	2

Compound with highest score:

Source: SAX & NFPA DATA

Bazardous Waste Quantity

Total quantity of hazardous waste at the facility (excluding those with a containment score of 0):

LINENDUN - AREA HAS BEEN USED AS SEVERAL LANDFILLS - EINCE FI37 AND NO RECORDS ON AMOUNT HAS BEEN LEFT

Basis of estimating and/or computing waste quantity:

Source: "A Preliminary Hydrogeologic Investigation in the Northern Parties of Read Creek & Vieinity"

By Ron St John, 4/81, DEPA Report

* * SCORES A O

5 1/2 37.5

Ground Water Use

Tre(s) of aguifer(s) of concern within a 3-mile radius of the facility:

Industrial / Commercial - Source: IL. STATE NATER SURVEY

Mississippi River is major water source in the area

Distance to Nearest Well

< 2000 ft : Monsonto well upgradient to GW flow but couses one of depression in water table - contominated well</p>

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified public-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius:

MONE Track Supply the & used bothed theo
Truste - industrial - Amount
Cerro Carp

Population served by each above public-supply well and how computed:

PSW-0 Source: ISWS

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

IN/A

Total population served by ground water within a 3-mile radius:

Industrial use only Scores A @.

J

the size and environment.

1 OBSERVED RELEASE

-TOCB's, Chloroaniline, dichlorobenzene, cyclohenone, Chlorophenol

Reasoning by which the presence of the detected contaminants can be can be attributed to the facility: the presence of the detected contaminants can be can

Contaminants deposited directly into waters - Lab. analysis of creek downskrown & certain company holding ponds show waste analysis of the same type

SOURCE: ST. JOHN'S REPORT

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

N/A - 0: R.

Name/description of nearest downslope surface water:

N/A - O.R.

Average slope of terrain between facility and above-cited surface water body in percent:

N/A - O.R

Is the facility located either totally or partially in surface water? N/A - O(C)

Is the facility completery surrounded by areas of high elastion?

N/A -OR

1-Year 24=Hour-Rainfallein Inches

- N/A - D.R.

Distance to Nearest Downslope Surface Water home common to

N/A - O.R.

Physical State of Waste

N/A - D.R.

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

N/A - O.R.

Method with highest score:

N/A - O.R.

4 MASTE CHARACTY IST S

Refer to Ground Water Route

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Recreption - Children play in creak

Scories A 2

Is there tidal influence?

No

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

> Zmile

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

> 1 mile

Distance to critical habitat of an endangered species or national wildlife refuge, if I mile or less:

> Insile

Scares A 6

Physilation Served by Sounce ater

Location(s) of public-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance:

None

Population served by each above public-supply intake:

None

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

N/A

Total population served:

Rame/description of nearest of above water bodies:

Dead Creek

Distance to above-cited intakes, measured in stream miles.

NA

TOTAL: SCORES A @

I OBSERVED RELEASE

Contaminants detected:

__ No specifics - just a survey to get a flue or minus reading (check for spots : above background)

Source: FIT memo 4/14/82 by Dan Woods

Date and location of detection of contaminants

3/23/82

North and of David Creek - just south of Queeny Are.

Methods used to detect the contaminants:

Organic Vapor Analysizer

2-HILL Photo-Ionizer 10.2 en lavit

11.7 en lamp

Explosimeter, Radichon Eurrey meter, Oz Indicator

Reasoning by which the presence of the detected contaminants can be attributed to the site:

"Absorption of contominants with the soil, a buried pipe was found entering the create with a turbed 5 only liquid coming from it. Widwest Rubber use to pipe their waste into the creak (creak bed is sporsy when you will on it)

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Three most reactive compounds (indicate one used):

Phosphorous

Arsenic

SCOKES A D

Three most incompatible pairs of compounds (indicate one used):

Territing

Three most toxic compounds (indicate one used):

PCB's

3

Dichloro phenol

3

chloroaniline

ine

Hazardous Waste Quantity

Total quantity of hazardous waste:

UNKNOWN

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

l to 4 mi

1/4 to 1/2 mi

0 to 1/4 mi

6, 100 people

Scores A

21

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

12 Zmiles

Distance to 5-acre (minimum) fresh-water wetland, if I mile or less:

> Inile

Distance to critical haitat of an endangered splie if I mile or less:

Scores A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

< 1/4 mile (2200ff) TOPO map & FIT inspection

SCURES A 3

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

None

Distance to residential area, if 2 miles or less:

Z mile -bpo map F, FIT inspection
 Scores A
 D

Distance to agricultural land in production within past 5 years, if 1 mile or less:

ZY mile topo map & FIT inspection
SCORES A @

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Z & mile topo map & FIT insportion
Scores A D

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

No - only the St. Louis Arch

TIRE AND EXPLOSION - FICTURES THOM SEPH FILE OF CREEK ECD

ON FIRE

CONTAINMENT -> WASTE DUMPED WITH NO SEGREGATION

SCORES A 3

WASTE CHARACTERISTICS

DRECT EUIDENCE - no measurements, but photographs
of creek bed on fire

scapes A 3

IGNITABILITY	~ >	Scoles	A	3	
--------------	------------	--------	---	----------	--

	TOXICITY	PERSISTENCE	1641 TABILITY	REACTIVITY
Chlorobenzene	ح '	2	3 '	0
Dichbrophenol	3	1	٥	0
Chloroaniline	· 3	1	l	O
PCB	3	3	0	\mathcal{O}° .
Phosphorous	3	1	3	t
Arsenic	. 2	1	0	1
Cyclohercane	7	2	3	Ó

Schee: SAX AND NEPA DATA
REACTIVITY - SCORES A (1)
INCOMPATIBILITY - SCORES A (1)

HAZ. WASTE QUANTITY -> UNKNOWN: SCORES A (6)

TARGETS

DIST. TO NEAREST POP.

201 ft - 2640 ft SCORES A 3

SOURCE: U.S.GS. TOPO MAP (DIST ~ 500 ft)

DIST. TO NEWREST BUDG.

51 - 200 ft Screes A 2

SOURCE: U.SGS. TOPO MMP (DIST ~ 55f+)

DIST TO SENSITIVE ENVIR. - SCORES A O

LAND USE - SCORES A 3 (See oir section)

POP. WIN 2 MILE RADIUS -> 12,239: 18 of E St. Louis 5 1520 block

(E St. Louis: 51700 pop)

Counted off of map x 26 feet/octs

5,700/8=6463 reple SCUTETS A (5)

BLOGS. WIN 2 MI.RAO. - 1520 counted; 6463/3.8 = 1700 TOTAL: 3220

DIRECT CONTACT

OBSCRUED INCIDENT -> Yes, resident's dog rolled in ditch and cheal of apparent chemical burns in Aug. 1980 SOURCE: ST JOHN'S REFORT

WHSTE CHARACTERISTICS: TOXICITY - PCB's = 3 SCORES A D
TARGETS: POP WIN I MI RAD - 6,100 SCORES A D

DIST. TO CRITICAL HABITAT: SCORES A @

1. What information has already been provided to Headquarters?

If the response to any of the questions is readily available in Headquarters so state and give the names and telephone numbers of the people having the information and in what form (memo, report, etc.) it was supplied.

None

2. What is the History/threat of the site?

A short, descriptive narrative of one to two pages is preferred with an appendix of significant dates, Include a list of substances found, or believed to be found on the site (with notations to distinguish the difference) and a short description of the population at risk and/or the environment affected.

Illegal dumping of large amounts of phosphorus in an ephemeral stream has resulted in surface water and soil contamination. Animals exposed to the area have died from the exposure.

3. What detailed studies have been performed on the site?

A short description of each study, with dates performed. The name of the contractor, the project officer (with address and telephone number) and a summary of the findings will be needed. A copy of the final report, or executive summary of each study will be requested to be sent to Headquarters. These studies include hydrogeological studies, soil, water and air monitoring, ground-penetrating radar studies and any others which define the extent of the problem, provide information needed to plan remedial measures and/or provide for a facility plan completely or partially clean the site.

'Samples from the ditch have been taken, and indicate extremely high levels of phosphorus.

4. What emergency/remedial actions are necessary to clean the site?

These actions are those necessary to completely eliminate or ultimately secure the hazardous materials on or off the site. The description of these measures should be as specific as possible and should reflect the data obtained in the studies supplied in answer to question 3. These actions are not limited to those already approved or underway but should be those that should be performed for a total cleanup of the site. These are, however, generic activities such as "removal of contaminated soil", "repackaging and/or removal of drums", "construction of a leachate collection and treatment system". Include the studies that should be performed in order to better define the remedial activities needed.

The contaminant source must be removed and properly disposed of.

5. What alternative measures have been suggested?

For each activity prescribed in question 4 provide a list of alternative methods considered at the site to acheive the objective. If only one method is available to effect some remedial measure, or no alternative measures have been considered, simply state that as the case. If possible, provide the merits and demerits of each alternative considered.

None.

- 6. What is the final cleanup plan, if any, for the site?
- . None.

7. What mechanisms are available for funding the above closure plans?

Such funding sources include 311 monies, state fundings, private sources through Administrative Orders or consent decrees, money "volenteered" from private sources. FIT contracting or subcontracting and Superfund money.

None other than superfund.

8. What actions have been planned for the site?

These remedial/emergency activities are a subset of those indicated under question 2 and include those actions for which RFP's, IFB's, and/or TDD's have been prepared. These are activities for which the scope of work and work plans have been developed but have not been initiated.

Other than state-continued minitoring, no actions have been planned.

9. What problems are present to prevent the implementation of activities under question 8?

Such problems may include awaiting final results of a necessary study, poor weather conditions delaying construction, disallowal of 311 money for the planned activity, extended contract negotiations, lack of subcontracting money under the FIT contract, public interference, lack of acceptable disposal site and/or method. Include the anticipated time to overcome the obstacles and any actions that Headquarters could take to expedite the solution.

Funding problems prohibit solutions to the contamination problems.

10. What actions are currently underway at the Site?

A brief description of the level of activity, extent of remedy anticipated, time of completion and associated costs (if available) of such activities as State-directed cleanup, 311 actions, owner/operator and legislation.

None.

11. Have cost estimates been developed?

At best estimate of the total cost should be supplied. If at all possible the rationale behind the estimate should be provided. Also, needed, if available, are the cost estimates for each anticipated activity described under questions 3 and 4. Include the dates applicable to each of the cost estimates.

No.

12. Have time estimates been developed?

A best estimate of the total time needed to clean the site as well as times and scheduling for each phase of cleanup should be provided. Is a facility management plan available, or can one be developed? If so, please supply this information. If enforcement/legistation is underway have deadlines been established under Administrative orders or a consent decree? If so, what are they and are they being met? Has a case development plan been formulated? If so, what are the relevant dates?

No.

13. What are the important circumstances relevant to the cleanup that should be considered?

There seems to be no culpable party, the dumping was clandestine.

For instance,

Enforcement/litigation - What are the prospects of getting a responsible party to affect the cleanup in an acceptable time? Is some necessary precedent being established?

Public Participation - Are public interest groups actively involved?

To what extent? Supply names (and telephone numbers) of people that should be contacted if the site is selected for cleanup under Superfund.

State Involvement - What level of activity has the STate shown in regards to the site? Should the State office be contacted directly? Who in the State office should participate?

Congressional Interest - Have any STate or Federal Congressman shown a substantial interest in the site?

Notoriety - Have newspapers, television, activist groups publicized the site? Examples would be Love Canal, Memphis, Valley of the Drums, etc.